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ANXIETY REACTIVITY AND ESCAPE TENDENCIES IN SOCIOPATHIC PERSONALITIES

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The clinical genus that includes those individuals who present such marked antisocial or deviant behaviors as to require incarceration is the sociopathic personality disturbance (American Psychiatric Association, 1952). Psychopathologists have recently attempted to distinguish three subgroups within this genus in hopes of establishing differential etiological antecedents and rehabilitative treatments (Cleckley, 1964; Lykken, 1957; Schacter & Latane, 1964).

The "purest" form of this antisocial personality has been labelled as the primary or true sociopath. A variety of factors (e.g., neurological lesions, selected social retardation, autonomic dysfunction) have been hypothesized as predisposing this condition Cleckley, 1964; Coleman, 1964; Hare, 1965). A second subtype is the "normal" or dissocial sociopath. This phenotype supposedly acquires his antisocial behavior tendencies by nurturance in a dissocial environment such as a ghetto or asocial family (Cleckley, 1964; Coleman, 1964; McCord & McCord, 1964). A third commonly differentiated subgroup is the neurotic sociopath. He is "driven" to his deviant behavior by psychoneurotic needs (Cameron, 1963). Despite the clinical evidence for some tripartite grouping of this type, it has been difficult to establish meaningful criteria for diagnostic isolation which disregards overlapping symptomotology.

However, there is emerging a set of research findings that offer hope for such diagnostic precision. This development centers around attempts to clarify the differential role of anxiety in sociopathy (Lykken, 1957; Schacter & Latane, 1964; Schoenherr, 1964; Tong & Murphy, 1960).

The evidence presented suggests that the primary sociopath is atypical in his ability to manifest anxiety, either in avoidance learning from anxiety cues or in displaying psychophysical responses to stressful or other experimental stimuli. On the basis of this past research, Pappas (1968) has conceptualized that there exists an underlying continuum of anxiety reactivity which covarys with the sociopathy syndrome. This conceptualization suggests that there are at least two corresponding endpoints of low trait anxiety and primary sociopathy. It further hypothesizes corresponding midpoints of moderate trait anxiety and dissocial sociopathy and opposite endpoints of high trait anxiety and neurotic sociopathy.

Lykken (1957, 1967) has developed a promising psychometric instrument, the Activities Preference Questionnaire (APQ), for assessing sociopaths' differential anxiety reactivity with a verbal self-report questionnaire. In past usage, this instrument has been effective in selecting Ss who react differently to experimental situations or who have been nominated by clinicians for the various subgroups (Lykken, 1957; Schacter & Latane, 1964). These studies have indicated that nominated primary sociopaths typically score low on the trait measured.

To extend the research evidence of the postulated relationship of anxiety and sociopathy and to help validate the construct assessed by the APQ, the present study utilized performance under stress and escape from stress paradigms (Coffer &

Appley, 1964). In the first, task relevant behavior occurs in the presence of a stressor agent. According to a response interference hypothesis postulated by various learning theorists (Mandler, 1966; Spence and Spence, 1966; Spielberger, 1966), if the task is complex, those Ss having a high state of anxiety should present more spontaneous task irrelevant responses (e.g., errors, blocking) than low anxious Ss. Performance measures for high anxious Ss should then be lower under a stress condition. If the conceptualized underlying continuum of anxiety is valid, it can be hypothesized that primary sociopaths, who supposedly have lower trait anxiety, will perform better under stress than neurotic sociopaths who have higher trait anxiety, and dissocial sociopaths should fall in some middle range.

The escape from stress paradigm is established by presenting Ss with incentives to remain in an aversive field that allows escape. Clinical experience and learning formulations of approach-avoidance tendencies suggest that the APQ selected primary sociopaths should choose escape more often than the other groups (Buss, 1966; Pappas, 1968).

If these predictions, based on the past research suggesting that anxiety is the differing characteristics for sociopathic subgroups (Lykken, 1957; Schacter & Latane, 1964; Schoenherr, 1964), are sustained, then the ability to make differential diagnosis and treatment dispositions for prisoners or hospitalized sociopaths would be enhanced.

METHOD

Subjects. Seventy-five adult males incarcerated at the Indiana State Reformatory at Pendleton, Indiana, were used for the experimental procedures. The experi-

mental sample was selected from a pool of inmates involved in the prison's educational program.

The APQ was administered to this sample pool (N=289). Inmate scores were rank ordered, and the Ss with the highest 25 APQ scores (HAS), the middle 25 APQ scores (MAS), and the lowest 25 APQ scores (LAS) were selected as the experimental groups.

In keeping with past studies (Lykken, 1957; Schacter & Latane, 1964), the LAS were operationally defined as primary sociopathic personalities, the MAS as dissocial sociopathic personalities and the HAS as neurotic sociopathic personalities. The APQ scores of the final experimental groups were: LAS=32.38; MAS=50.92; HAS=67.96. These groups were significantly different ($p. < .001$). However, these Ss proved to be statistically similar on 17 control variables (e.g., IQ, age) (Pappas, 1968).

The APQ. Lykken (1967) reports that "the APQ is designed to discover individual differences in the extent to which anxiety operated to determine the S's behavior choices in everyday life (p.2)." The test consists of items in which the subject must choose between two activities statements, both of which are unpleasant. One of the statements is unpleasant because it is anxiety arousing for most people (e.g., "having an accident with a borrowed car"); the other is onerous for most people but lacking anxiety content (e.g. "cleaning up a spilt bottle of syrup") (Lykken, 1967). Reliability studies report r's in the .80's (Lykken, 1967).

Apparatus. For the experimental procedure, each S wore a pair of accoustically matched headphones. Each S could terminate the audio imput to his phones

and signal this to the E. All phones (N=5) received their imput from a tape recorder that provided taped instructions and a noxious noise stimulus. The noxious noise used in the experimental procedure was developed by superimposing a haphazardly varied tone level generated by an audio oscillator on a white noise background (Pappas, 1968). Past studies have shown that noise of this nature is extremely noxious (Cohen, 1956; Elisio, 1960). The procedure took place in five testing cubicles.

Materials. Each S received a packet of 20 conceptual task sheets. The code key and the items used on these sheets were identical with the digit symbol subtest of the Wechsler Adult Intelligence Scale (WAIS). The total number of trials was increased by generating new items with random numbers. Each task sheet contained 12 rows of 25 trials each, or 300 trial items. The WAIS instructions and practice were used (Wechsler, 1958).

Procedure. The experimental procedure was administered to groups of five Ss. Each group randomly represented the three anxiety conditions. All experimental groups received all experimental conditions. The first condition, S_1, was the modified WAIS digit symbol task under the 90 second time limit with no stressor agent. After completing it, the Ss removed the first page of their packets and E collected these and presented each S with a sample packet of 4 cigarettes as a reward for participation. The second experimental condition, S_2, replicated S_1 with the exception that all the Ss received the stressor agent or noxious noise while performing on the digit symbol task. Again, the completed materials were gathered by E and a second reward packet was distributed.

Under the final experimental condition, Es, the Ss could work at the digit symbol task under the noxious noise stressor agent for as long as 45 minutes, receiving a packet of four cigarettes for every two task pages completed (i.e., 600 trial items).

RESULTS AND DISCUSSION

The dependent measures examined under all experimental conditions were: (1) the number of trials attempted; (2) a performance index consisting of a ratio of trials attempted over time; and (3) the frequency of Ss in each group committing uncorrected errors. In addition, under the Es condition, (4) a measure of time at the task before termination was also used.

A 3 x 2 (anxiety level x stressor condition) analysis of variance (ANOV) for repeated measures (Winer, 1962) was employed to assess groups differences for the trials attempted measure under the S_1 and S_2 conditions.

The F ratios for differences between anxiety level groups and for interaction effects were non-significant. The difference between the total number of trials completed under conditions S_1 and S_2 was significant ($F=168.14$; $p<.05$). Inspectional analysis showed strong performance increments for all experimental groups. This similarity in the groups was attributed to practice effects and the short task intervals, which masked the emergence of the later discovered group differences.

Examination of the data for the criterion of uncorrected errors showed that the majority of Ss tied for 0 erros producing a J-function frequency distribution. Because of this, the X^2 statistic was utilized to perform the group differences

analysis. No significant differences between anxiety level groups were found for any of the experimental conditions (X^2=.03, df=2, p=ns). This error measure proved sysfunctional because of the allowance for Ss to correct their errors.

The mean number of seconds before choosing to terminate the Es condition for each anxiety level group were as follows: LAS=1990.36; MAS=2390.56; and HAS=2553.72. A single classification ANOV (Winer, 1962) was utilized for the statistical analysis of group differences. The F ratio produced was significant (F=5.07; p .05). A Newman-Kuels procedure to test differences between groups means showed that LAS's terminated significantly earlier than the MAS or HAS (p .05; df=172) but that these latter groups did not differ from each other. These results partially sustain the hypothesis that APQ selected groups of incarcerated Ss display differential escape tendencies.

Performance effectiveness under the noxious stimulation was another target behavior of concern. A 3 x 3 (anxiety level x experimental condition) ANOV for repeated measures (Winer, 1962) assessed performance index differences. The F ratios for within group differences and interaction effects proved to be nonsignificant. There was a significant between-group difference (F=4.64; p= <.05). Examination indicated that this was primarily in the Es condition. To focus on this between group difference, an ANOV for unequal Ns was computed for the mean number of trials completed by the Ss who remained in the Es condition for the full 45 minutes. The mean number of trials completed for the groups were as follows: LAS=2020.5; MAS=1663.24; and HAS=1717.38. The significant group differences also appeared in this analysis (F=5.57, p <.05). A Newman-Kuels comparison across ordered

means showed the LAS group was significantly different from the MAS and HAS who were not different from each other. The hypothesis of differential performance under stress for incarcerated sociopathic groups selected by the APQ was partially sustained.

While the differential reactivity for the three experimental groups was not consistently indicated, the significantly different performance of the LAS's and behavioral trends of the Ss does justify the suggestion that the APQ can select groups of incarcerated Ss that have differential anxiety reactivity. The appearance of the differential escape tendencies, predicted partly from clinical formulations, seems to also enhance the relationship of the APQ measured "anxiety reactivity" and the clinical genus of sociopathy, especially for the phenotype of primary sociopathy.

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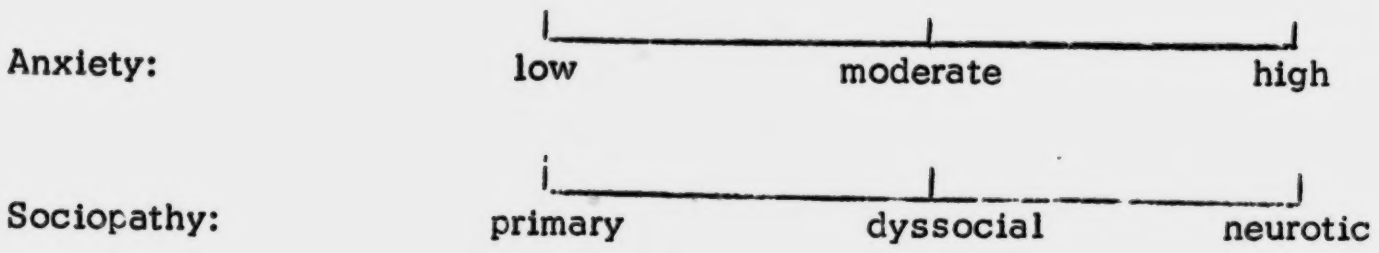

Figure 1. Parallel Continua for Anxiety and Sociopathy.

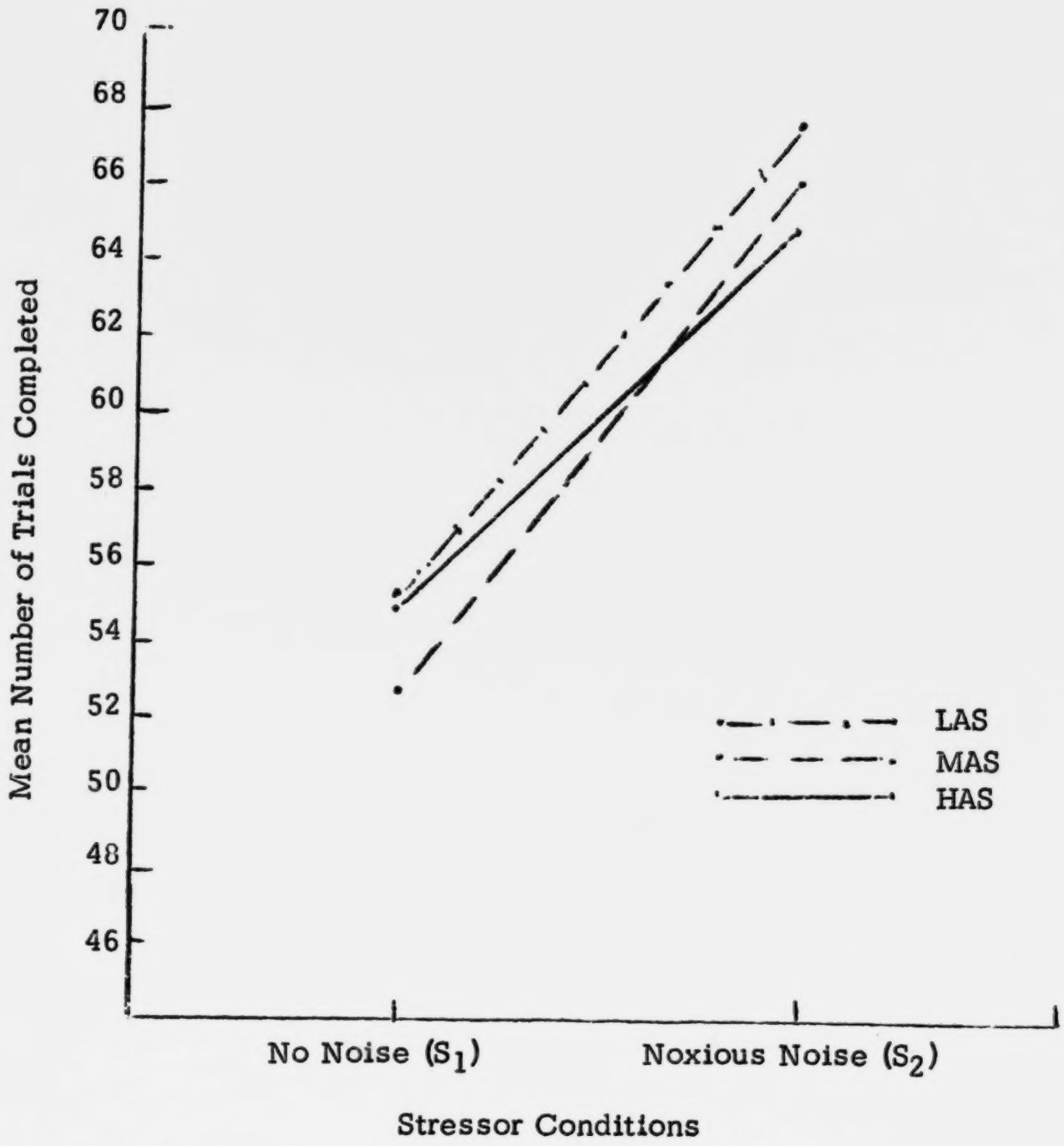

Figure 2. Mean Number of Digit Symbol Trials Completed for Three Anxiety Level Sociopathic Groups under 90 Seconds Conditions of No-Noise and Noxious Noise.

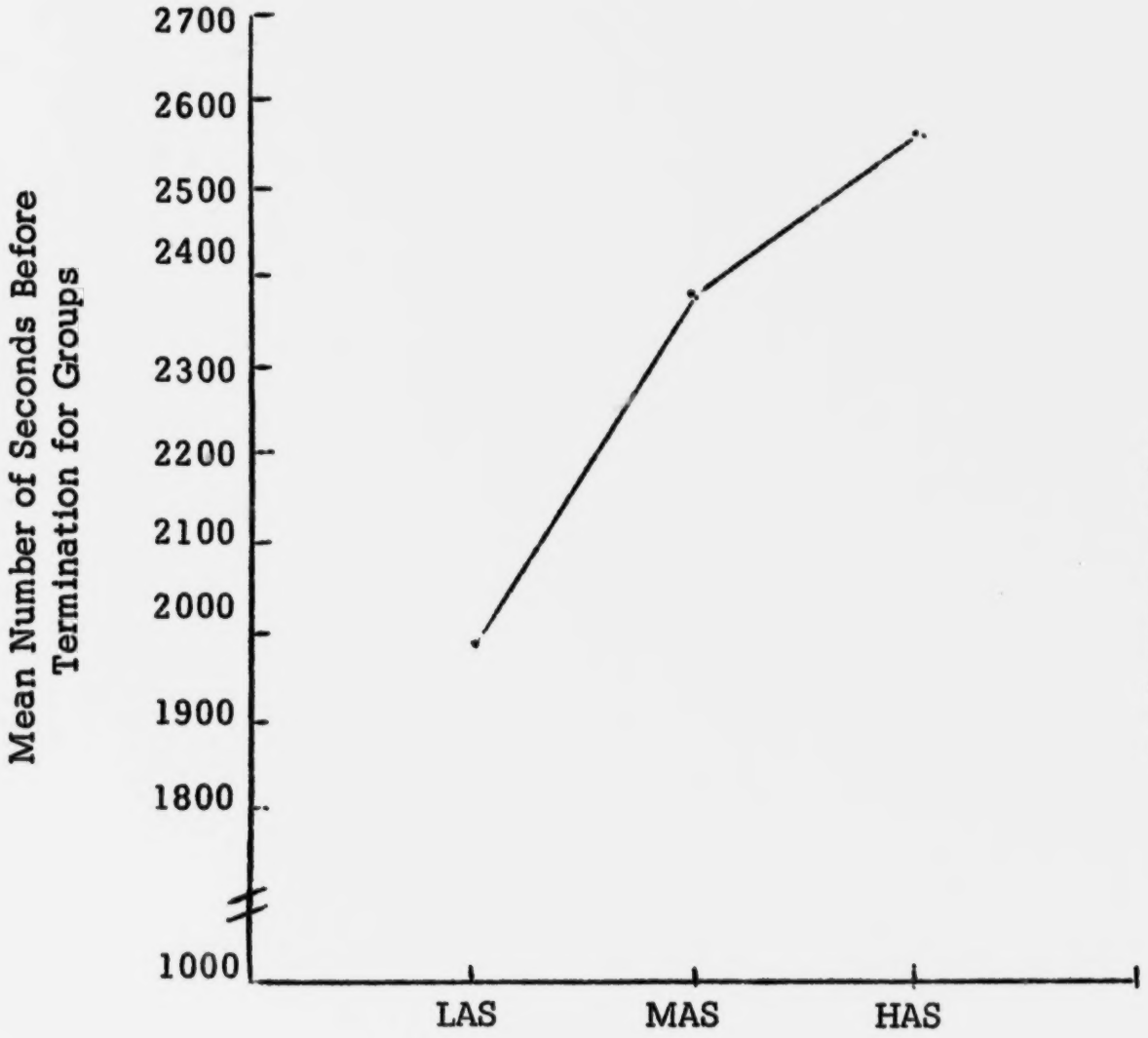

Figure 3. Mean Number of Seconds Before Task Termination by the Three Anxiety Level Groups on the Es Condition.

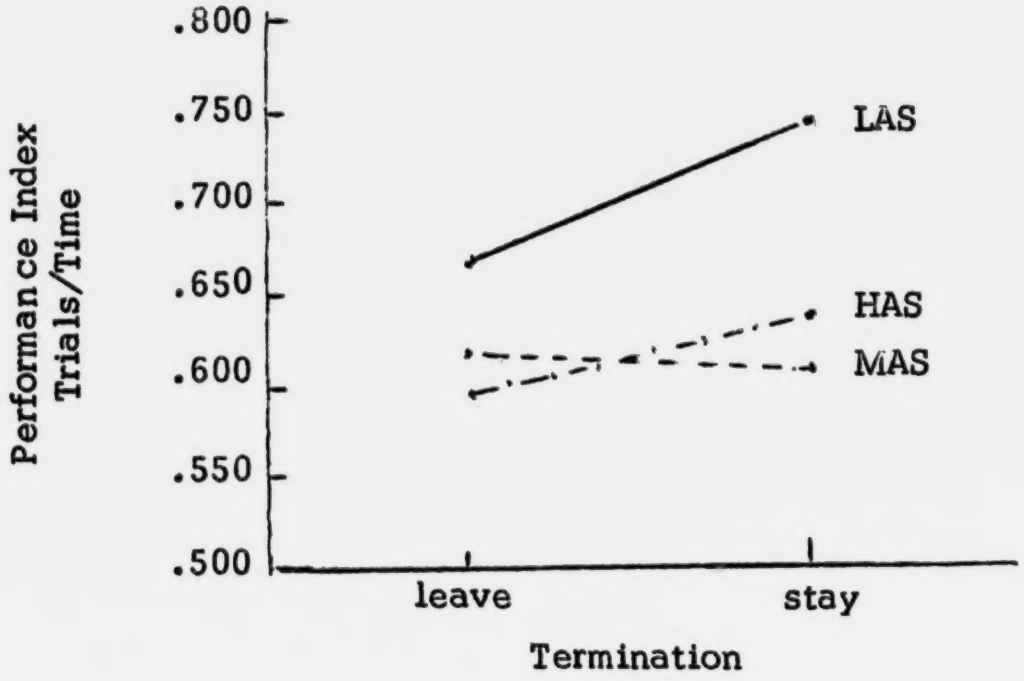

Figure 4. Mean Performance Indices for the Sociopathic Groups in the Es Condition Who Terminated or Remained.

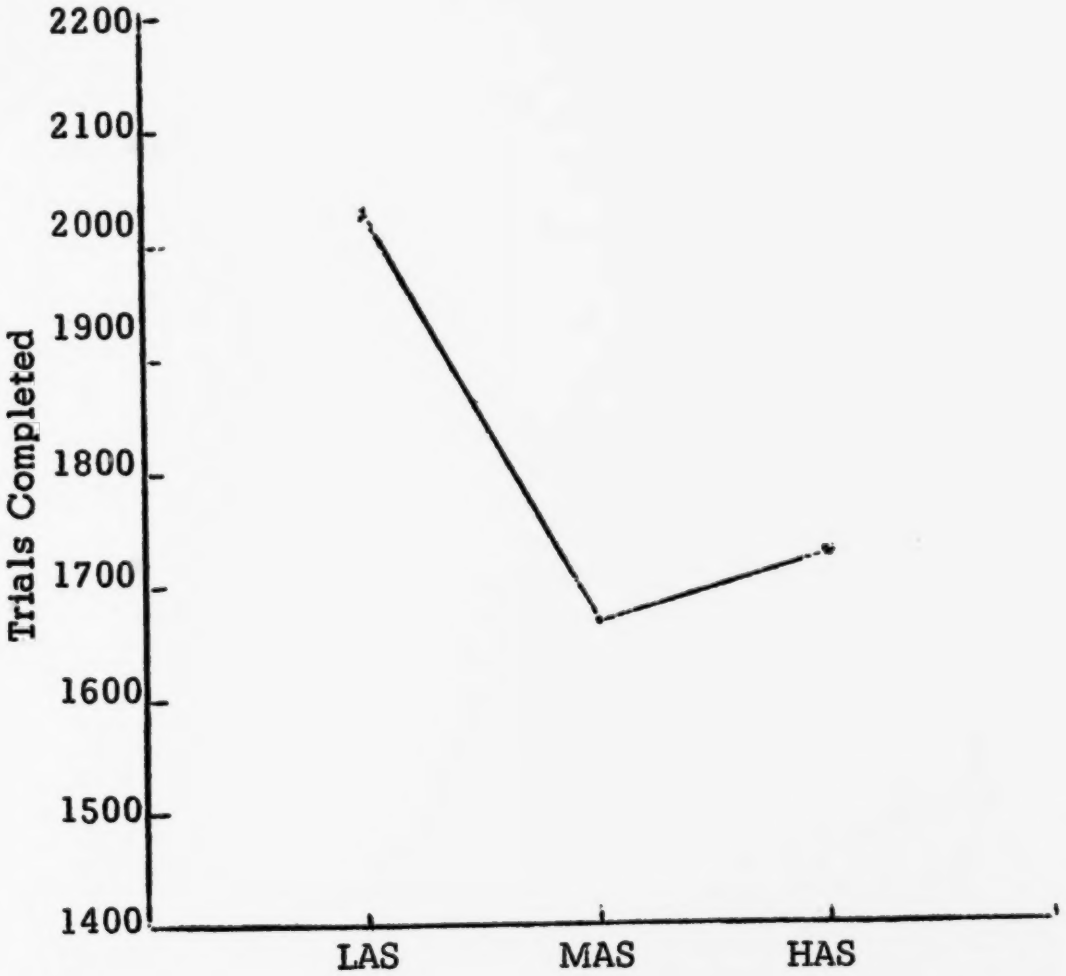

Figure 5. Mean Number of Trials Completed by Three Anxiety Level Groups That Did Not Terminate the Es Condition.

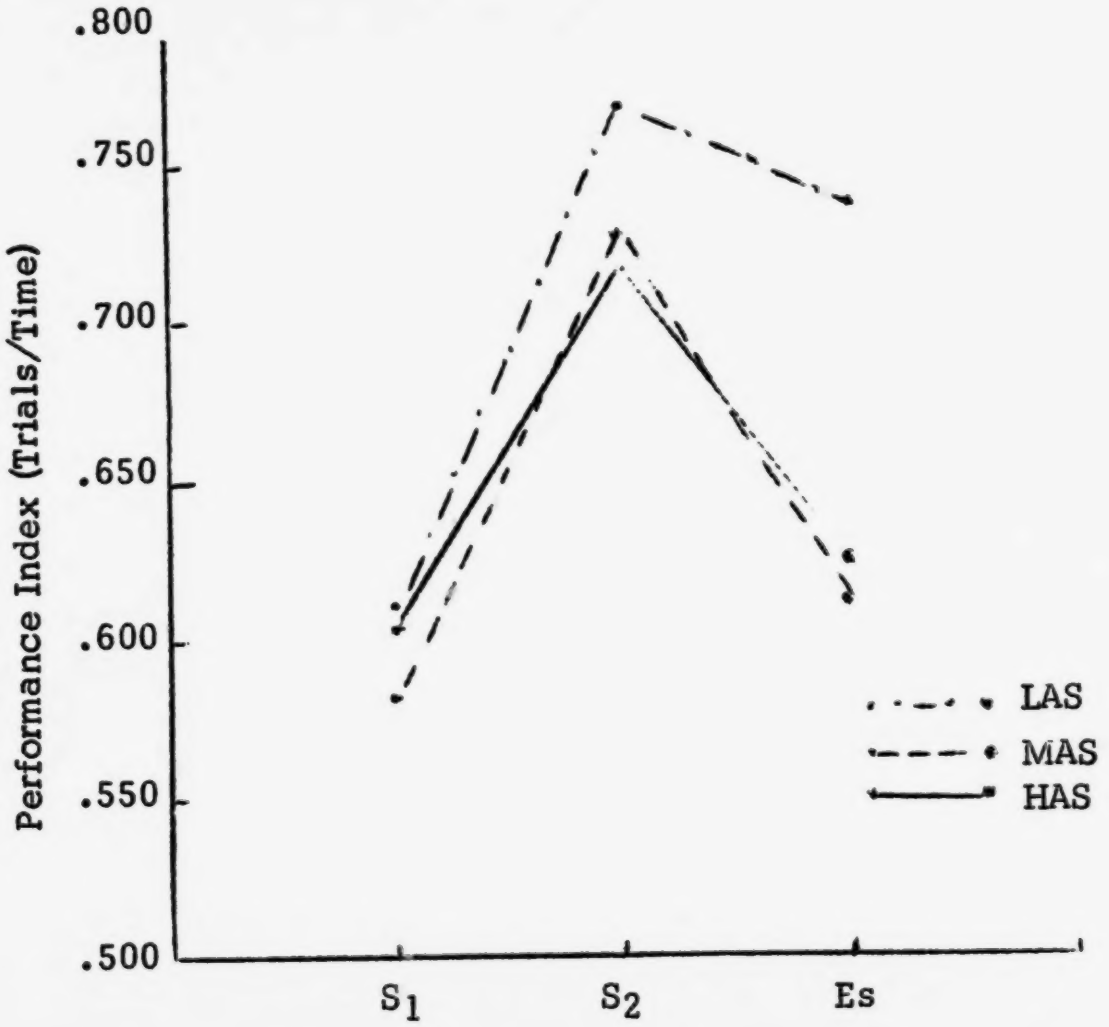

Table 6. Mean Performance Indices Across Conditions for the Anxiety Level Groups.